

Opportunity Title: Relative risks of wildfires to water quality and fish habitat

Opportunity Reference Code: EPA-ORD-NHEERL-WED-2018-02

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply A complete application consists of:

- An application
- Transcripts – [Click here for detailed information about acceptable transcripts](#)
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

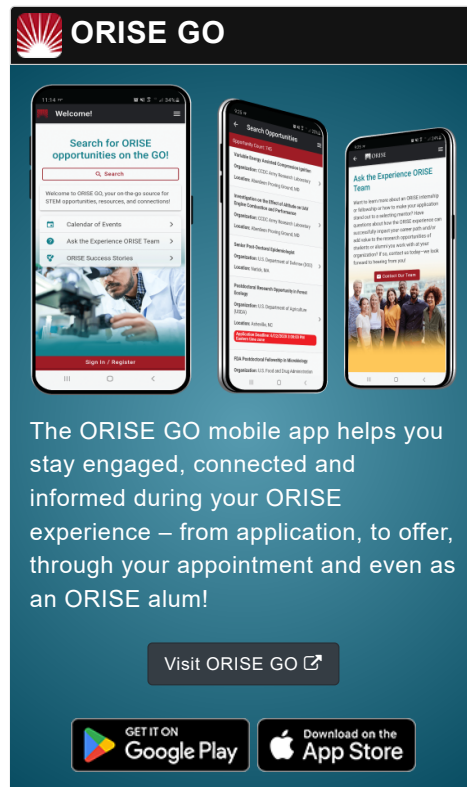
All documents must be in English or include an official English translation.

If you have questions, send an email to EPArpp@orau.org. Please include the reference code for this opportunity in your email.

Description This interdisciplinary research project, by pairing ecological and hydrological science with mechanistic and simulation modeling, will provide a unique opportunity to participate in research to enhance understanding of the relative risks of wildfire and associated activities on aquatic systems and inform protection actions for habitat resilience and restoration actions for habitat and fish recovery. The research participant will assist in watershed modeling research at Western Ecology Division (WED) to support modeling of stream and landscape attributes as influenced by wildfire and projected human activities, and subsequent projected effects on fish assemblages. This research aims to develop a quantitative foundation for integrating physical and ecological data that is required to improve our capacity to make strategic decisions regarding important current and future policy needs supporting the EPA's capacity to protect the nation's water resources as mandated under the federal Clean Water Act.

The research may involve statistical analysis to characterize spatial and temporal aspects of aquatic environments, including temperature, flow, and physical features. Application of process-based models of stream temperature, sediments, and/or nutrients may be an important component of this research project. Simulation modeling of alternative futures may be used as a means to evaluate potential environmental effects of management options. Simulation modeling on fish energetics in response to fire effects on habitat may also be involved. The research will primarily be conducted using existing datasets but some field data collection may be required.

The research participant will interact with a team of aquatic ecologists, hydrologists, ecological modelers and other

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environmental scientists and may have the opportunity to be involved in the following activities:

- Conducting data analysis, documenting code and interpretation of results.
- Conducting and documenting quality assurance and review of data analysis and databases.
- Preparing reports, presentations and summaries of data.
- Presenting results at professional meetings.
- Publishing results.

This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and EPA. The initial appointment is for one year, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

The mentor for this project is Dr. Joseph Ebersole (ebersole.joe@epa.gov). The anticipated start date for the appointment is September 1, 2018.

Qualifications

Preferred candidates will have a PhD in Fisheries Science, Ecological Engineering, Hydrology, Forest science, Watershed Science or related field within five years of the desired start date. Three years of relevant experience with demonstrated excellence and a Master's degree in a relevant field may be substituted for the PhD. Knowledge of spatial analysis techniques and water temperature modeling, and the ability to manage and analyze spatially explicit datasets is desired.

Knowledge of watershed science and aquatic ecology is preferred. Experience in statistical modeling at varying spatial scales using standard statistical languages such as R, Stata, or Python to support simulation modeling of physical or ecological systems is desired. Preferred candidates will have:

- exceptional data management skills.
- skills for documenting activities and writing reports and scientific manuscripts.
- exceptional communication skills. This includes writing





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skills, verbal skills and public speaking experience.

- demonstrated skills working as a part of a group.
- ability to search electronic literature and critically evaluate the quality of published science.

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
 - **Earth and Geosciences** (3 )
 - **Engineering** (1 )
 - **Environmental and Marine Sciences** (8 )
 - **Life Health and Medical Sciences** (3 )